



**By Email and FedEx**

September 18, 2015

Monica Morales, Unit Chief  
Air Quality Planning Unit  
1595 Wynkoop St. (8P-AR)  
Denver, CO 80202

Re: Air Dispersion Modeling of Colorado Sulfur Dioxide Pollution

Dear Ms. Morales:

Sierra Club urges the U.S. Environmental Protection Agency to designate the areas surrounding the Martin Drake and Ray Nixon coal-fired power plants, which are in and near Colorado Springs, as nonattainment under the sulfur dioxide ("SO<sub>2</sub>") National Ambient Air Quality Standard ("NAAQS"). Air dispersion modeling recently conducted by Wingra Engineering, S.C. on behalf of the Sierra Club demonstrates that SO<sub>2</sub> emissions from the Martin Drake and Ray Nixon coal plants in Colorado have caused downwind SO<sub>2</sub> ambient air concentrations to exceed the 75 parts per billion (or 196.2 micrograms per cubic meter) NAAQS. In particular, the modeling shows peak concentrations as high as **1,661.2** micrograms per cubic meter. Accordingly, the area surrounding Martin Drake and Ray Nixon should be designated nonattainment under the NAAQS.

Enclosed, please find the results of the modeling analysis, along with the corresponding modeling input and output files. The modeling analysis includes two sets of assumptions: (1) actual, and (2) allowable. The "actual" emissions are the measured emissions for each hour between January 1, 2012 and December 31, 2014 as taken from USEPA Air Markets Program Data. This set of data therefore shows the air that residents of Colorado Springs have been breathing in recent years. The "allowable" emissions data assume that the Martin Drake plant will meet the Regional Haze BART emission limitations for Units 5, 6 and 7 (0.26, 0.13, and 0.13 lbs/mmbtu (30-day average), respectively). This set of data shows that, even after Martin Drake completes the installation of the Neustream SO<sub>2</sub> controls currently being developed (and assuming that

the controls work), the permitted emissions limits could still cause exceedances of the NAAQS.

I am aware that the Colorado Air Quality Control Commission recently recommended a designation of “unclassifiable” for the areas around Martin Drake and Ray Nixon on the theory that the state needs more time to gather site-specific meteorological data. However, this recommendation ignores the existing available data and would mean that Colorado Springs residents would continue to breathe harmful air for years to come.

At an August 20, 2015 meeting, the Colorado Air Quality Control Commission voted to delay making a decision on attainment status for Colorado Springs until as late as 2017 so that the state could collect and review site-specific meteorological data at Martin Drake. This delay is both unnecessary and harmful to public health. The existing meteorological data and emissions data are sufficient to model SO<sub>2</sub> concentrations in the area. Moreover, the attached modeling report shows that, based on that existing data, Martin Drake is causing significant exceedances of the NAAQS for SO<sub>2</sub>.

The Colorado Spring Airport collects meteorological data and is located less than 10 miles from the Martin Drake coal plant. While the plant is closer to the mountains, there are no major topographical formations between the airport and Martin Drake that would cause the results to be significantly different. As a result, the data available from the airport is representative of weather that affects Martin Drake and spreads SO<sub>2</sub> pollution through the Colorado Springs community. Further, the model’s results based on the airport met data concur with the concentrations recorded from the single SO<sub>2</sub> air monitor in Colorado Springs. The predicted concentration from the model near the monitor is 187 ug/m<sup>3</sup>. This includes a background of 76 ug/m<sup>3</sup>, so the modeled impact due to Martina Drake and Ray Nixon emissions is 111 ug/m<sup>3</sup> without any background. The 3-year design value at the monitor for the same period 2012-14 is 58 ppb or 152 ug/m<sup>3</sup>. The predicted impact of 111 ug/m<sup>3</sup> at the monitor location (without any background considered) is close to the measured concentration of 152 ug/m<sup>3</sup>. This suggests the weather from the Colorado Springs Airport provided an accurate assessment of impacts.

Notably, the model predicts that the air quality *at the location of the monitor* does not exceed the 1-hour SO<sub>2</sub> limit. It is therefore not surprising, and in fact entirely consistent with the model, that the monitor data does not indicate a violation. However, the model does show substantial violations nearer to the mountains and north of the monitor. Therefore, the monitor’s readings cannot be relied on as dispositive evidence that there is no violation occurring in the area. The monitor is simply not within the plume.

Further, the state’s planned delay of an additional year to collect yet more data comes with a substantial cost. A determination made today – based on the best data

available today – shows that Martin Drake is causing the area to exceed the NAAQS by a substantial amount. The historic data of actual emissions show that Martin Drake is causing the area to exceed the protective limit by more than a factor of *eight* ( $1,661.2 \mu\text{g}/\text{m}^3$  compared to  $196.2 \mu\text{g}/\text{m}^3$ ). Even after applying the assumption that the Neustream scrubbers will work and Martin Drake will meet its Regional Haze BART limits, the existing data still shows that the plant could cause area  $\text{SO}_2$  concentrations that will be more than triple the protective limit ( $643.4 \mu\text{g}/\text{m}^3$  compared to  $196.2 \mu\text{g}/\text{m}^3$ ). EPA's default assumption should therefore be that the area is non-attainment.

Colorado's modeling guidance includes a discussion of when site-specific meteorological data is necessary for obtaining an air quality permit.<sup>1</sup> The determination of whether site-specific modeling is required is made on a case-by-case basis. Colorado does not require every major source requesting prevention of significant deterioration ("PSD") permits to provide site-specific meteorological data. It makes no sense, therefore, to delay the  $\text{SO}_2$  determination in this case when delay is only likely to confirm what we already know today: that the air in Colorado Springs exceeds the 1-hour  $\text{SO}_2$  standard. To its credit, Colorado often requires new major sources to obtain site specific met data. This means that potential new sources that would create additional pollution must gather and submit the best data before Colorado issues a permit. This requirement serves to protect public health and the environment because it means that the status quo (i.e. no project and no emissions) will continue until the site-specific data is available. However, in this case, applying that same rationale would have the opposite effect on public health.

By waiting for site-specific meteorological data at Martin Drake before making a recommended NAAQS determination, Colorado is attempting to maintain the status quo for several more years. Unlike the situation discussed above with respect to new PSD permits, where maintaining the status quo means that a new project would not emit new pollution until more data is collected, in this case maintaining the status quo means that the coal plant will continue to emit harmful  $\text{SO}_2$  while more data is collected. EPA should recognize the distinction in this circumstance, and it should not sacrifice public health for the sake of additional data that is still likely to show violations of the NAAQS. The delay is also unnecessary because good meteorological data currently exists from the airport.

Furthermore, an "unclassifiable" determination is essentially a free pass to exceed the standard for many years to come. Even if Colorado collects the necessary data over the next year or two, EPA is required by court order to designate Colorado Springs by July 2016. If EPA makes an "unclassifiable" designation, that determination could remain in place for indefinitely until a redesignation is made.

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<sup>1</sup> Colorado Modeling Guideline for Air Quality Permits, Dec. 27, 2005, p. 42-43. Available at: <http://www.colorado.gov/airquality/permits/guide.pdf>

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September 8, 2015  
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We urge EPA to consider this information as it undertakes area designations in Colorado for the 2010 revised primary SO<sub>2</sub> NAAQS. This information is being provided to both EPA's Office of Air Quality Planning and Standards and to appropriate personnel at the Colorado Department of Public Health and Environment. In the meantime, please let me know if I can provide any additional information.

Thank you for your attention to and consideration of this matter, and please do not hesitate to contact me if you would like to discuss further.

Sincerely,

/s/ Travis Ritchie  
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Enclosure:

\*Martin Drake Power Plant, Evaluation of Compliance with the 1-hour NAAQS for SO<sub>2</sub>

August 5, 2015

\* Data files